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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,715	01/25/2002	Thomas M. Aune	O119.12-0013	3167

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KINNEY & LANGE, P.A.  
THE KINNEY & LANGE BUILDING  
312 SOUTH THIRD STREET  
MINNEAPOLIS, MN 55415-1002

EXAMINER

CECIL, TERRY K

ART UNIT PAPER NUMBER

1723

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/056,715

Applicant(s)

AUNE ET AL.

Examiner

Mr. Terry K. Cecil

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11-2-2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-16 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5-8 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are indefinite because of the following reasons:

- The degree of measurement represented by “*substantially* thicker” (claims 8 and 16) or “*substantially* greater than” (claim 5) is unclear. How do these terms differ from stating merely “thicker” or “greater than”?
- Claims 6 and 7 are rejected since they suffer the same defects as claim 5 from which they depend.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

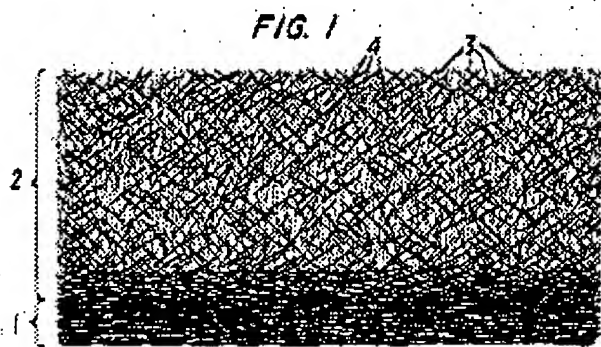
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Pall et al. (U.S. 3,353,682). Pall teaches a composite filament mass used as a filter comprising two layers (1, 2).



As shown, the layers are continuous and intertwined. Even though the fibers of layer 1 is substantially parallel, intertwining still exists (see also figure 2). The layers are thermally-bonded, polymer filaments (col. 5, line 70; col. 8, line 7; col. 10, lines 3-10; col.

16, lines 27-29). Layer 2 surrounds layer 1, where both layers are cylindrical (col. 16, line 51; col. 26, lines 25-29). The filter composite mass has the efficiency to “absolutely remove” 1 micron particles or greater (down to 0.03 micron, see col. 4, lines 53-59). The diameter size of the fibers used in the layers includes a range of “less than about 25 microns” (col. 5, lines 49-50), which includes applicant’s claimed ranges [as in claims 1 and 3]. In Pall’s examples, the fiber lengths are 0.5 microns and smaller [as in claim 2]. Pall also teaches a pressure drop of 15 p.s.i. for 10 gal/(min\* $\text{ft}^2$ ) [as in claim 1] which is equivalent to 1.5 p.s.i. for 1 gal/(min \*  $\text{ft}^2$ ) [as in claim 4]. Pall also teaches interlocking between the fine and coarse layers (col. 7, lines 68-72) [as in claim 9]. It is noted that “less than *about* 1.5 microns” to describe the first mass and “greater than *about* 1.5 microns” to describe the second mass are considered to intersect at at least 1.5 microns such that the diameters of both masses can be the same (e.g. 1.5).

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***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

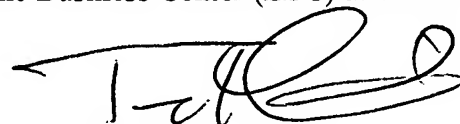
6. Claims 5-8 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pall '682 in view of Shipp, Jr. et al. (U.S. 4,714, 647). Pall was expanded above and teaches the limitations of claims 12-14. Shipp teaches calendaring the resultant laminate web (col. 4, lines 21-23) [as in claims 5 and 11] and having a density gradient (which inherently includes zones or portions) [as in claims 5-6 and 10]. It is considered that it would have been obvious to one ordinarily skilled in the art at the time of the invention to have the resulting laminate composite filter of Pall to be calendared as in Shipp, since Shipp teaches the benefit of enhancing filtration efficiency (col. 4, lines 21-23). It is considered that it would have been obvious to one ordinarily skilled in the art at the time of the invention to have the layers of Pall to have a gradient density as in Shipp, since Shipp teaches the benefit of particulates being trapped across the filter's depth without prematurely plugging the layers (abstract). As for claims 7-8 and 15-16, the thickness of the layers is a matter of optimization that depends upon the environment of use, e.g.

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characteristics of the fluid to be filtered (flow rate, viscosity, degree of contamination, etc.) and degree of calendaring.

7. Contact Information:

- Examiner Mr. Terry K. Cecil can be reached at (571) 272-1138 at the Carlisle campus in Alexandria, Virginia for any inquiries concerning this communication or earlier communications from the examiner. Note that the examiner is on the increased flextime schedule but can normally be found in the office during the hours of 8:30a to 4:30p, on at least four days during the week M-F.
- Wanda Walker, the examiner's supervisor, can be reached at (571) 272-1151 if attempts to reach the examiner are unsuccessful.
- The Fax number for this art unit for official faxes is 703-872-9306.
- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mr. Terry K. Cecil  
Primary Examiner  
Art Unit 1723